

## CLAIMS

We claim:

- 1        1. Method for depositing a material (3) on a substrate wafer (1) having the  
2        following method steps:
  - 3            (a) provision of the substrate wafer (1), which has a growth area (4) intended for  
4            a later material deposition,
  - 5            (b) application of a thermal radiation absorption layer (2), which exhibits a good  
6            absorption of thermal radiation on the rear side (5) of the substrate wafer (1),  
7            which faces away from the growth area (4),
  - 8            (c) heating of the substrate wafer (1) to the deposition temperature,
  - 9            (d) deposition of a material (3) onto the growth area (4) of the substrate wafer (1)  
10          by an MOVPE method.

- 1        2. Method according to Claim 1,  
2        in which the material (3) to be deposited is a semiconductor material.

- 1        3. Method according to Claim 1,  
2        in which the material (3) to be deposited comprises at least one layer made of  $\text{Al}_x\text{Ga}_y\text{In}_{1-x-y}\text{N}$ , where  $0 \leq x+y \leq 1$ ,  $0 \leq x \leq 1$ ,  $0 \leq y \leq 1$  apply.

- 1        4. Method according to claim 1,  
2        in which a substrate wafer is used which essentially comprises SiC or an SiC-based  
3        material.

1           5. Method according to claim 1,  
2       in which a material or a material mixture which exhibits inert behaviour during the  
3       deposition method in accordance with method step (d) is applied as the thermal  
4       radiation absorption layer (2).

1           6. Method according to claim 1,  
2       in which a material or a material mixture which is compatible with the material and/or the  
3       contact-connecting process of an electrical contact that is to be applied later, is applied  
4       as the thermal radiation absorption layer (2).

1           7. Method according to claim 1,  
2       in which the thermal radiation absorption layer (2) is applied by means of sputtering in  
3       accordance with method step (b).

1           8. Method according to claim 1,  
2       in which a doped Si layer, in particular a highly doped Si layer, is used as the thermal  
3       radiation absorption layer (2).

1           9. Method according to Claim 8,  
2       in which the Si layer is applied with a thickness which lies between 10 nm and 20 µm  
3       inclusive.

1        10. Method according to Claim 8,  
2    in which the Si layer has a doping of at least  $1 \times 10^{19}/\text{cm}^3$ .

1        11. Method according to claim 1,  
2    in which the heating in accordance with method step (c) is essentially effected by  
3    means of thermal radiation.

1        12. Method according to claim 1,  
2    in which, in method step (c), a heating source is used which generates thermal radiation  
3    of a spectral range for which the thermal radiation absorption layer (2) exhibits good  
4    radiation absorption.